SECTION 07 19 20
MOISTURE VAPOR CONTROL SYSTEM

PART 1 - GENERAL

1.1 DESCRIPTION

A. This Section includes moisture vapor control system for use below interior floor coverings.

1.2 RELATED WORK

A. Division 09 Sections for patching and leveling compounds applied with floor coverings.

1.3 PERFORMANCE REQUIREMENTS

A. Apply to ground floor slabs and elevated floor slabs where floor covering material is specified in Division 09 Sections to reduce water vapor emissions of concrete floor slabs to predetermined levels.

B. Contractor shall assure the surface to meet planarity requirements of a deviation not to exceed 3mm (1/8 inch) under a 3.05 m (10 foot) straight edge.

1. Examine substrates, prior to preparation, the substrate shall be inspected to insure conformance to this Section.
2. Surface shall be free of foreign material, dirt, grease, paint or other bond breakers.
3. Verify acceptance of inspected surface prior to performing preparation.

C. Performance Requirements:

PROPERTY	TEST	RESULT
Permeability	ASTM D1653	0.044 perms
Permeability	ASTM E96 (Water Method)	0.11 perms
Affect of pH	Immersion in Concentrated KoH with pH of 14	No effect
VOC Content	SCAQMO 1168	0g/L

1.4 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: Plans indicating substrates, locations, and average depths of moisture vapor control system based on survey of substrate conditions.

C. Manufacturer Certificates: Signed by manufacturers of both moisture vapor control system and floor covering system certifying that products are compatible.

D. Qualification Data: For Installer.

E. Minutes of preinstallation conference.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Installer who is approved by manufacturer for application of moisture vapor control system products required for this Project.

B. Product Compatibility: Manufacturers of both moisture vapor control system and floor covering system certify in writing that products are compatible.

C. Preinstallation Conference: Conduct conference at Project site.

D. Installation of ARDEX Moisture Control System must be by a factory-trained ARDEX LevelMaster Elite Installer who has specific experience with the installation of ARDEX MC.

E. Applicator must file a pre-installation checklist with the manufacturer and receive written confirmation of the approval to proceed in order to obtain the 10 year ARDEX Moisture Control Warranty.

F. ARDEX Moisture Control System shall be installed only over concrete surfaces that have been properly mechanically prepared to a minimum surface profile of ICRI CSP #3 and which have a moisture emission level of 20 lbs. or less at the time of testing when measured in accordance with ASTM F1869, or an RH value of 95% or less when measured in accordance with ASTM F2170.

G. ARDEX Moisture Control System shall reduce the vapor emissions of the concrete to less than 3 lb. and the underlayment or topping surface shall be suitable to receive all types of floor coverings or sealers when allowed to properly dry in accordance with Ardex recommendations.

H. The device used to measure the RH of the concrete shall be the Wagner Rapid RH Probe.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store materials to comply with manufacturer's written instructions to prevent deterioration from moisture or other detrimental effects.

1.7 PROJECT CONDITIONS

A. Environmental Limitations: Comply with manufacturer's written instructions for substrate temperature, ambient temperature and humidity, ventilation, and other conditions affecting moisture vapor control system performance.

1. Place moisture vapor control system only when ambient temperature and temperature of substrates are between 10 and 23 deg C (50 and 70 deg F).

1.8 COORDINATION

A. Coordinate application of moisture vapor control system with requirements of floor covering products, including adhesives, specified in Division 09 Sections, to ensure compatibility of products.

PART 2 - PRODUCTS

2.1 MOISTURE VAPOR CONTROL SYSTEM

A. Basis-Of-Design Product: Subject to compliance with requirements, provide Ardex; MC Moisture Control System or comparable product.

B. Epoxy-based moisture control: ARDEX Moisture Control.

C. Portland cement-based underlayment or topping: Ardex product suitable for the intended use.

D. Pre-smoothing very uneven substrates: ARDEX S 31 Smoothing Compound.

E. Fill dormant cracks: Epoxy material MM80 or approved equal.

F. Sand broadcast into the fresh ARDEX S-MC coat: Fine sand that is less than 1/50 of an inch in grain size or 98.5% passing sieve size #35.

G. Aggregate: Well graded, washed gravel, 1/8” to 14” or larger.

H. The device used to measure the RH of the concrete shall be the Wagner Rapid RH Probe.

I. Water: Potable and at a temperature of not more than 21 deg C (70 deg F).

2.2 MIX DESIGNS

A. Each individual unit of ARDEX P-MC Primer and ARDEX S-MC Sealer contains separate, pre-measured quantities of the hardener (Part A) and the resin (Part B). The hardening agent (Part A) is added to the resin (Part B).

B. ARDEX S 21 is mixed in 2-bag batches at one time. Mix each bag of ARDEX S 21 (50 lb.) with 5 quarts of water. Product shall be mixed in an ARDEX T-10 Mixing Drum using an ARDEX T-1 Mixing Paddle and a 1/3” heavy-duty drill (min. 650 rpm). Mix thoroughly for approximately 2-3 minutes to obtain a lump-free mixture. Follow written instructions per the ARDEX S 21 bag label.

C. For mix designs related to the use of ARDEX underlayments and toppings, refer to the standard mixing instructions for installation over concrete as shown in the manufacturer’s installation instructions.

D. For instructions on the filling of dormant cracks and joints, follow the written instructions of the selected epoxy manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for conditions affecting performance.
   1. Proceed with application only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. General: Prepare and clean substrate according to manufacturer's written instructions.
   1. Treat nonmoving substrate cracks according to manufacturer's written instructions to prevent cracks from telegraphing (reflecting) through moisture vapor control system.
   2. Fill substrate voids to prevent moisture vapor control system from leaking.

B. Concrete Substrates: Mechanically remove, according to manufacturer's written instructions, laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants that might impair moisture vapor control system bond.
   1. Moisture Testing: Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with installation only after substrates do not exceed a maximum moisture-vapor-emission rate of 20 lbs. of water (9.06 kg of water) or less in 24 hours.
   2. Moisture Vapor testing in accordance with ASTM F2170 shall be deemed to be at a measured relative humidity of 95% or less as measured by a relative humidity test, such as Wagner RH, at the time of installation of the ARDEX Moisture Control System.

C. Adhesion Tests: After substrate preparation, test substrate for adhesion with moisture vapor control system according to manufacturer's written instructions.

3.3 APPLICATION

A. General: Mix and apply moisture vapor control system components according to manufacturer's written instructions.
   1. Close areas to traffic during moisture vapor control system application and for time period after application recommended in writing by manufacturer.

2. Coordinate application of components to provide optimum moisture vapor control system -to-substrate and intercoat adhesion.
3. At substrate expansion, isolation, and other moving joints, allow joint of same width to continue through moisture vapor control system.

B. Apply moisture vapor control system to produce uniform, level surface.
1. Apply a final layer without aggregate to produce surface.
2. Feather edges to match adjacent floor elevations.

C. Cure moisture vapor control system according to manufacturer's written instructions. Prevent contamination during application and curing processes.

D. Do not install floor coverings over moisture vapor control system until after time period recommended in writing by moisture vapor control system manufacturer.

E. Remove and replace moisture vapor control system areas that evidence lack of bond with substrate, including areas that emit a "hollow" sound when tapped.

3.4 FIELD QUALITY CONTROL

A. Field sampling of the Ardex products is to be done by taking an entire unopened unit or bag of the product being installed to a Contractor engaged independent testing facility to perform the specified testing. No in situ test procedures for the evaluation of the materials specified shall be performed.

3.5 PROTECTION

A. Protect moisture vapor control system from concentrated and rolling loads for remainder of construction period.

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